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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,101

02/01/2005

Liliana Bagala' Rampazzo

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09/19/2008

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EXAMINER

NELSON, MICHAEL E

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

09/19/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/523,101	<b>Applicant(s)</b> BAGALA' RAMPAZZO ET AL.	
	<b>Examiner</b> MICHAEL E. NELSON	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7,13,14,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7,13,14,16 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Claims***

1. In response to Applicant's reply dated 09/08/2008, claims 7, 13-14, 16-17 are pending. Claims 1-6, 8-12, 15, 18-29 have been cancelled. Claims 13-14, and 16-17 have been amended.

### ***Response to Amendment***

2. Due to the discovery of new art of relevance, the finality of the previous office action is hereby withdrawn.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lupo et al. (5,840,217) with evidence supplied by Towle (4,898,983).

5. Concerning claims 7, Lupo et al. describe the synthesis and preparation of 9,9'-spirobifluorene compounds for use in electroluminescent devices. Lupo et al. specifically detail the synthesis of acetyl derivatives of 9,9'-spirobifluorene, particularly

2,2'-diacetyl-9,9'-spirobifluorene based on electrophilic acylation of 9,9'-spirobifluorene (column 27, Lines 5-22).

6. Based on the synthetic method described by Lupo et al., it would have been obvious to one of ordinary skill in the art to substitute well-known aryl chlorides instead of acetyl chloride in the electrophilic acylation reaction to produce aroyl substituted 9,9'-spirobifluorene analogs. For example, Towle (4,898,983) describes the use of electrophilic acylation reactions for forming aryl carbonyl compounds, and specifically mention the use of acetyl chloride, or aryl chlorides such as 4-fluorobenzoyl chloride, and 4-hydroxybenzoyl chloride (column 4, lines 3-8).

7. Since Lupo et al. utilize the 9,9'-spirobifluorene compounds in an electroluminescent device, the compounds are known to be electrically conducting. In such a device, electrons are injected into the material, by definition producing the radical anion of the material. As such, the radical anions of the compounds are an obvious variant of the compounds themselves, since they are used as materials in electrical devices.

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

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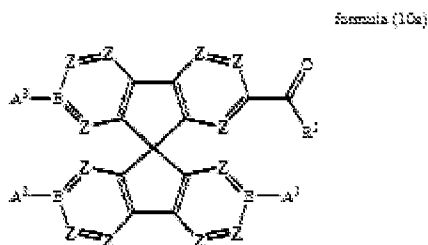
1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 7, 13-14, 16-17 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 19 of U.S. Patent No.

7,345,301. Although the conflicting claims are not identical, they are not patentably distinct from each other because U.S. Patent No. 7,345,301 claims compounds of the formula shown below, where Z is CR<sup>1</sup>, where E is C, where A<sup>3</sup> includes hydrogen or alkyl, where R<sup>1</sup> includes aromatic groups, and where A<sup>1</sup> or A<sup>2</sup> may be CO-R<sup>7</sup>, where R<sup>7</sup> includes aromatic groups. (See claim 19) This structure and its description fully encompasses the scope of the present claims. Therefore, it would have been obvious to one of ordinary skill in the art to use the compound that is disclosed in the copending claims and thereby arrive at the present invention from the copending one.



Claims 7, 13-14, 16-17 directed to an invention not patentably distinct from claim 19 of commonly assigned U.S. Patent No. 7,345,301. See discussion above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned U.S. Patent No. 7,345,301, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

### ***Response to Arguments***

10. Applicant states that the previous arguments of record serve to support the use of any aromatic group in the structure of claim 7. However, as stated previously, it is examiners position that the use of any aromatic group, which encompasses heteroaromatic ring systems, and substituted aromatic systems result in a degree of uncertainty such that the evidence provided by the comparison does not support the full scope of the claim. Specifically, the inclusion of heterocycles which may be electron

poor or electron rich, and therefore have highly different electronic characteristics compared with aromatic hydrocarbons, as well as potential reactive sites, depending on the heterocyclic ring structure. Substituents may also cause problems with reactivity in a radical state, and therefore reduce the effectiveness of the compounds as charge transporters, based on the stabilization an anion radical.

11. Examiner wishes to note that aromatic hydrocarbons would generally be supported by the teachings of the comparison, since the increased stabilization due to resonance would be predicted to remain or increase with greater aromatic ring size. Furthermore, alkyl and aryl substituents would not be predicted to otherwise affect the stability and/or reactivity of the compounds in a radical state. Limiting claim 7 to aromatic hydrocarbons, such as phenyl, bihpenyl, 1-naphthyl, 2-naphthyl, 9-anthryl, or perylenyl, as stated in original claim 3 would be allowable. Otherwise limiting claim 7 to aromatic hydrocarbons, where supported by the original specification would likewise be allowable over the prior art, given the data in the comparison.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL E. NELSON whose telephone number is (571)270-3453. The examiner can normally be reached on M-F 7:30am-5:00pm EST (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael E. Nelson  
Examiner  
Art Unit 1794

/Callie E. Shosho/  
Supervisory Patent Examiner, Art Unit 1794